

CERTIFICATION OF HAZARDS CONTROL

This form must be completed and signed for all projects involving hazardous materials BEFORE the project is begun. In addition, students must submit their certification form to the OCSEF [Scientific Review Committee \(SRC\)](#) for review BEFORE starting experiments or risk not being accepted to the OCSEF.

PLEASE TYPE OR PRINT

Name of Student Investigator 1 (include First and Last Name)	School Name	Grade
Name of Student Investigator 2 (for team projects only)	School Name (leave blank if same as above)	Grade
Name of Student Investigator 3 (for team projects only)	School Name (leave blank if same as above)	Grade
Project Title		

The following contains examples of precautions that must be taken to prevent injury to persons or the environment for which a certification of hazards control is required. No list could possibly foresee all possible hazards, so teachers, parents and students must carefully plan and follow safe procedures specific to each study. The materials and procedure section of the project description must contain explicit and detailed statements as to how and where experiments will be conducted. Include all hazards you anticipate or encounter and necessary precautions in response to questions in the certification form.

MICROBIOLOGY

- Bacterial studies must be conducted in a properly equipped laboratory under qualified supervision. Petri dishes may be inoculated outside of the lab but must be immediately sealed and taken to the lab to be cultured. **Culturing organisms in the home environment is prohibited.**
- Cultures in Petri dishes must be sealed with tape or paraffin immediately after exposure/inoculation. Once sealed they should NOT be opened. Examination should be conducted through lids only. Dispose of dishes as if pathogenic (biohazard bags or sterilization)
- All bacteria, protozoa, and fungi (including molds) must be handled as if pathogenic. Pathogenic bacteria are not to be cultured. Pure cultures of nonpathogenic microorganisms should be used in experiments.
- Petri dishes inoculated with materials containing unknown microorganisms (i.e. the material is not a pure non-pathogenic culture) must not contain blood agar or Brain Heart Infusion (BHI) broth, but rather nutrient or trypticase soy agar.
- Manipulation of molds must take place in a fume hood or open-air area (to prevent contamination of living areas with fungal spores). If anyone in the area has a depressed or damaged immune system or any allergies, experiments with molds must be conducted in a laboratory. Containers must be sealed at all times during observations and disposed of as if pathogenic.

HAZARDOUS CHEMICALS

- Consult materials safety data sheets (MSDS) prior to use of any hazardous chemicals. The use of especially hazardous chemicals should be avoided and substitutes used when possible. If the use of certain hazardous chemicals (e.g. gel preparations of acrylamide, a neurotoxin or ethidium bromide, a mutagen) cannot be avoided, extra precautions must be exercised and described in this Hazardous Materials Certification.
- Petri dishes that are inoculated with materials containing unknown microorganisms (i.e. the material is not a pure non-pathogenic culture) must not contain blood agar or Brain Heart Infusion (BHI) broth, but rather nutrient or trypticase soy agar.
- The use of controlled substances (drugs, chemicals, anesthetics, narcotics, etc. which are regulated by [the comprehensive drug abuse prevention and control act of 1970](#)) must be in accordance with existing local, state and federal laws. See your pharmacist or write the department of health for information about these laws. The use of many such substances is prohibited by the OCSEF.

VERTEBRATE ANIMAL TISSUE

- Includes recombinant DNA, cells, tissues and organs from human or other vertebrate animals, and also blood, blood products, blood (red) agar, saliva, urine and other body fluids. Excluded are non-pathogenic cells, tissues, and organs taken from invertebrate animals, plants and protists. Research involving any of the included items must be approved by the supervising teacher before experimentation is started.
- Students may conduct research on human blood, blood products or other body fluids only if tissues are handled in accordance with standards and guidelines set forth in [OSHA 29 CFR, Subpart z, 1910.1030](#) – Blood Borne Pathogens under the supervision of a qualified scientist. California law only allows medical doctors, registered nurses or licensed phlebotomists (lab technicians) to collect blood from a vein or artery.
- Students must identify the tissue or culture source, including the source of meat and meat products obtained from food stores, restaurants or meat packing houses.

HAZARDOUS EQUIPMENT

- If working with hazardous activities or devices that involve a level of risk above and beyond that encountered in the student's everyday life or whose operation requires a moderate to high level of expertise in order to insure safety, the possible hazards, potential risks, and necessary safety precautions must be assessed. Household items can be hazardous if used improperly.
- The supervising sponsor/advisor must assess the operation of a device that requires a moderate to high level of expertise to ensure safety. For example, hot plates and Bunsen burners may not require a documented risk assessment, whereas other devices such as high vacuum equipment, heated oil baths, NMR equipment, UV lights, lasers and high-temperature ovens require documentation of a risk assessment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Approved eye-protective devices should be used by all persons performing science activities involving hazards to the eyes. All persons in close proximity must be similarly equipped.
- Laboratory aprons and rubber or plastic gloves should be available and should be worn whenever hazards exist that could damage clothing, injure someone or irritate skin.
- Eyes and skin must not be exposed to ultraviolet light experimentally or accidentally as part of a project.

HAZARDOUS MATERIALS PLAN

For the questions below, provide detailed answers to the questions as they apply to your project and identify potential hazards clearly.

1. Describe the hazardous procedures/materials/substances involved with your experiment and where they will take place.
2. Source where materials are to be obtained. If commercial, give the name of the source. If a microorganism, include source as well as genus, species and strain.
3. Safety precautions to be taken during procedure (be specific for each hazard involved).
4. Describe the disposal method(s) to be used for hazardous materials.
5. Describe the procedures to be performed by the student.
6. Describe the procedures to be performed by the supervising scientist/adult supervisor.

MICROBIOLOGY PROJECTS ONLY (If these questions do not apply to your project write N/A next to the question).

7. What culture medium will be used?
8. Describe the method and timing of sealing petri dishes.

CERTIFICATIONS OF HAZARDS CONTROL

CERTIFICATION BY STUDENT(S)

I certify that the experimental procedures used in this science fair follow [the rules and regulations of the OCSEF](#) and [the Regeneron ISEF](#). I also certify that the procedures followed will ensure that neither the procedures nor the materials used constitute any known danger and that all microorganisms, pathogenic or non-pathogenic, will be handled and disposed of as if pathogenic.

I understand that this form must be approved and signed by all parties BEFORE the project can begin, and I will comply with this regulation.

Student Investigator 1 Name (Print)	Student Investigator 1 Signature
Student Investigator 2 Name (Print) *	Student Investigator 2 Signature *
Student Investigator 3 Name (Print) *	Student Investigator 3 Signature *

* Only required if the project is a group project with 2 or 3 student investigators

CERTIFICATION BY PARENT(S)/GUARDIAN(S)

I certify that I have reviewed the procedures described above and agree to allow my child to perform the procedures described on this form.

Parent/Guardian (Print)	Signature of Parent/Guardian
Additional Parent/Guardian (Print) *	Additional Signature of Parent/Guardian *
Additional Parent/Guardian (Print) *	Additional Signature of Parent/Guardian *

* Only required if the project is a group project with 2 or 3 student investigators

CERTIFICATION BY QUALIFIED SUPERVISOR (QUALIFIED TEACHER OR QUALIFIED PARENT OR QUALIFIED SCIENTIST)

I certify that I have reviewed the procedures described above and agree to directly supervise the above named student investigator(s) throughout the timeline of the experiment. I assume responsibility for ensuring compliance with the existing rules and regulations pertaining to hazardous materials.

Qualified Supervisor's Name (Print)	Signature of Qualified Supervisor	
Business or Laboratory Name (if qualified supervisor is not a parent of an investigator)	Position	Date Signed
Business or Laboratory Address (if qualified supervisor is not a parent of an investigator)	Phone (leave blank if student investigator's home phone).	
Describe your qualifications enabling you to supervise the level of risk involved in the hazardous procedures described in this study.		